Online Supplementary Materials

Institutionalized Defense Cooperation and Regime Security

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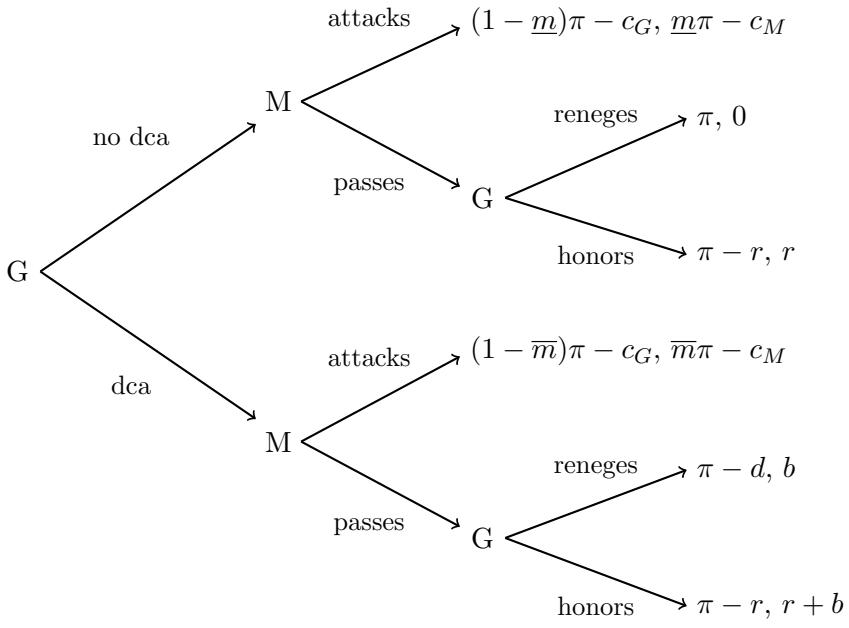
Appendix 1: Formal Model

I use a simple formal model to explain how DCAs reduce coups, even when they may enhance the military's capacity to overthrow the government. I focus on three key factors associated with the bargaining between the government and the military in the presence of a DCA. They include: (a) DCAs offer the military certain benefits that the government can not capture, but the military risks losing them if it removes the government; (b) these benefits weakly increase the military's capability to punish government defection; and (c) the government pays international costs for violating the agreement.

Figure A1 – Rent-sharing bargaining under the DCA arrangement



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Specification

Suppose the government, G, faces a dilemma in sharing rent with the military, M. The unsatisfied military can attempt to overthrow the government. However, transferring rents while making the military more satisfied with the status quo may also increase the military's capability to do so.[1] Now suppose the rent-sharing arrangement follows a pre-existing distribution, r and $\pi - r$, for M and G, respectively, out of total disposable rents π.[2]

G's rent-sharing arrangement with M can either (i) be an entirely domestic agreement involving only them or (ii) include an international agreement with a third party, another state, in addition to the domestic one. G can renege on the arrangement later, where reneging means violating the agreed distribution and capturing the entire pie,[3] if M does not attempt a coup. If M attacks, the control of the pie is determined by a costly lottery that M wins with probability $m \in (0, 1)$ and G with $1 - m$, and for which players pay $c_i > 0$. If M passes, the game ends with G either honoring or reneging the agreement.

As shown in Figure A1, the payoffs depend on whether the arrangement includes an international defense cooperation agreement. In the absence of a DCA, G provides M the agreed share, $r \in [0, \pi]$, as resources, such as increased budgetary allocation, perks, or some positions of power, on which it can renege later. For this local arrangement, reneging means G violating the arrangement by recapturing the rents provided to M. Although these rents can change the power balance to some extent, since they can be appropriated entirely, I treat them as benefits with a relatively lower effect on M's capability to win against G in the model.[4] So, in this case, M wins with probability $\underline{m}$. After G makes the arrangement, M either attacks, resulting in a coup attempt, or passes. In the event of a coup, G and M have a payoff of $(1 - \underline{m})\pi - c_G$ and $\underline{m}\pi - c_M$, respectively. When M does not stage a coup, G receives the entire π if it revokes the arrangement or $\pi - r$ if it honors. M gets 0 in the event of government defection and r otherwise.

When the arrangement includes a DCA, in addition to r, M receives some non-fungible benefits, $b > 0$, such as resources with specific military applications or prestige, including weapons systems, military education and training, or international roles. For instance, many partner states could arrange for their military personnel to receive high-quality training and education in the U.S. or other larger partner states under a DCA arrangement (as discussed in the theory section). G can not fully capture these benefits when it reneges. Here, reneging means G violates the arrangement by capturing r and withdraws from the international agreement, DCA. G pays international costs, $d > 0$, for withdrawing from DCA. The costs may include worsening diplomatic relations with the partner state or incurring other reputational costs, such as losing credibility with other states.

Since b can not be entirely expropriated later, it weakly increases M's chances of victory ($m[b] = \overline{m} - \underline{m}$, in which $\overline{m} > \underline{m}$), if there is a coup. However, G needs to be in the office to continue access to benefits. Therefore, when a coup and M prevails, it loses access to non-fungible benefits, at least partially, in the future. For simplicity, let us assume that when a coup and M prevails, it loses b, except for the part that is factored in its increased chances of victory. Moreover, b having purely military utilities, G can not capture them if it prevails in the coup. Hence, if M attacks in

the presence of a DCA, G and M's payoffs are $(1-\overline{m})\pi - c_G$ and $\overline{m}\pi - c_M$, respectively. When M does not attack, G receives $\pi - d$ if it reneges and $\pi - r$ if it honors the agreement. M receives b in the event of government defection and $b + r$ otherwise.

Analysis

Solving the game using backward induction entails conditions under which the presence of a DCA encourages a more stable civil-military rent-sharing arrangement. Proposition 1 describes values for which a DCA increases the prospect that the government will honor the arrangement.

While reneging always with no DCA in place, G honors the agreement in the presence of a DCA, iff

$$d > r.$$

Otherwise, G reneges.

Under the no DCA condition, G always reneges since $\pi > \pi - r$. In the presence of DCA, G reneges when $\pi - d > \pi - r$, that is, when $r > d$. The latter constraint is more restrictive as long as $d > 0$. In substantive terms, the public and international character of DCAs imposes some costs on the government for violating them, as discussed earlier. So, DCAs increase the costs of government defection, which also affects the military's incentive to maintain the status quo by shaping their expectations about how the government will behave.[5]

M does not attempt a coup when there is a DCA in place iff

$$b > \pi(\overline{m} - \underline{m}) - rs \quad \text{and} \quad \overline{m} - \underline{m} > \frac{rs}{\pi}$$

where $s = 0$ when G reneges, and $s = 1$ when G honors the agreement. Otherwise, M attempts a coup.

Proposition 2 describes the conditions under which DCAs discourage the military from mounting coup attempts. At the baseline, when there is no DCA in place, coups occur when $c_M < \underline{m}\pi$. Under a DCA, coups occur when $c_M < \overline{m}\pi - b$ if G reneges, and when $c_M < \overline{m}\pi - b - r$ if G honors the agreement. The constraint under which coups happen in the presence of a DCA is more restrictive than the baseline constraint when $b > \pi(\overline{m} - \underline{m}) - rs$, where $s = \{0, 1\}$, 0 and 1 indicating the scenarios in which G reneges and honors the agreement, respectively. This inequality is satisfied when $\overline{m} - \underline{m} > \frac{rs}{\pi}$, that is, when the boost in the military's capability is also large enough. Breaking the proposition down into whether G honors or reneges entails two conclusions. First, when $b > \pi(\overline{m} - \underline{m}) - r$ and $\overline{m} - \underline{m} > \frac{r}{\pi}$, DCAs discourage coups only if G honors the agreement. Second, when $b > \pi(\overline{m} - \underline{m})$ and $\overline{m} - \underline{m} > 0$, DCAs discourage coups irrespective of whether the government honors or reneges on the agreement.

Additionally, since $\pi(\overline{m} - \underline{m}) - r < \pi(\overline{m} - \underline{m})$, and $\frac{r}{\pi} > 0$, the constraints also imply that

to deter coups when G breaches the agreement, (a) the non-fungible benefits derived from DCAs must surpass those expected when G honors the agreement, but, (b) the boost in M's prospect of victory can be less than it would otherwise be if G were to fulfill the agreement. The constraints offer essential insights into the discussion because, for sufficiently large non-fungible benefits from DCAs and some minimal change in the power balance in favor of the military, the government can avoid coups, even when the military anticipates that the government may breach its promises at some point.

DCAs discourage coups, when G reneges, iff

$$\overline{m} - \underline{m} < \frac{b}{\pi} \quad \text{and} \quad \pi > b$$

and when G honors, iff

$$\overline{m} - \underline{m} < \frac{b+r}{\pi} \quad \text{and} \quad \pi - r > b.$$

The model can also specify conditions under which an increase in military capability *vis-à-vis* the government can still allow deterring coups if we solve the inequality that compares coup-occurrence constraints in terms of $\overline{m} - \underline{m}$. Proposition 3 describes these conditions. DCAs discourage coups when the increase in military capability remains below an acceptable threshold, that is, when $\overline{m} - \underline{m} < \frac{b}{\pi}$ if G reneges, and when $\overline{m} - \underline{m} < \frac{b+r}{\pi}$ if G honors the agreement. These constraints are satisfied when $\pi > b > 0$, and $\pi - r > b > 0$, respectively. Since $\frac{b+r}{\pi} > \frac{b}{\pi}$, these constraints also suggest that when G keeps the agreement in place, M would want to avoid staging a coup despite having a greater boost in its chances of victory. However, in that case, the level of non-fungible benefits must be lower than expected if G breaches the agreement.

Therefore, even if DCAs may increase the prospect of the military's victory to some extent, it can not be too high. The government can strategically adjust the level of b high enough to discourage coup attempts but not so high that it motivates them instead. So, in equilibrium, DCAs would reflect governments calibrating non-fungible resources to satisfy this trade-off such that, on average, DCAs reduce the probability of coup attempts.

Proof of the Formal Model

Proposition 1. At the terminal node, without a DCA the government (G) reneges because

$$\pi \geq \pi - r.$$

With a DCA, G reneges iff

$$\pi - d \;\geq\; \pi - r \quad \Longrightarrow \quad r > d.$$

Hence a DCA deters reneging whenever $d > 0$ and $r \leq d$.

Proposition 2. *Baseline (no DCA).* Knowing G will renege, the military (M) stages a coup when

$$c_M < \underline{m}\pi.$$

With a DCA, G reneges ($d < r$). A coup occurs when

$$c_M < \overline{m}\pi - b.$$

With a DCA, G honors ($d > r$). A coup occurs when

$$c_M < \overline{m}\pi - b - r.$$

Both DCA-world thresholds are stricter than the baseline whenever

$$b > \pi(\overline{m} - \underline{m}) - rs, \qquad s \in \{0, 1\},$$

where $s = 0$ when G reneges and $s = 1$ when G honors.

Proposition 3. Expressing the same conditions in terms of the rent differential $\Delta m \equiv \overline{m} - \underline{m}$:

$$\Delta m \; > \; \begin{cases} \dfrac{b}{\pi}, & G \text{ reneges } (s = 0), \\ \dfrac{b + r}{\pi}, & G \text{ honors } (s = 1). \end{cases}$$

Because $\pi > b > 0$ and $\pi - r > b > 0$ by assumption, both inequalities can be satisfied, establishing that a DCA (whether honored or not) tightens the coup constraint relative to the no-DCA benchmark. □

Appendix 2: Summary Statistics

Table A1 – Summary statistics (full sample)

	Observations	Mean	SD	Min	Max
Any coup (dummy)	5519	.0277224	.1641912	0	1
DCA (count)	5519	2.681283	6.26832	0	51
DCA (dummy)	5519	.4939301	.2500085	0	1
Defense alliance	5519	.5948541	.4909647	0	1
Past coup	5478	.0400852	.0980122	0	1
Democracy (Polity IV)	4751	1.614186	7.262127	-10	10
GDP per capita (logged)	5282	7.95013	1.612095	3.912867	11.97542
Military spending (logged)	4695	12.89068	2.364712	3.367296	20.35741
Military personnel (logged)	4769	3.528866	1.799477	0	8.465899
External threat	4860	.2912474	.1195469	0	.5288495
MID (fatal)	5519	.2197862	.4141392	0	1
Excluded group	4860	.3609053	.4803126	0	1
Civil war	5478	.0519107	.1845865	0	1

Table A2 – Summary statistics (developing countries)

	Observations	Mean	SD	Min	Max
Any coup (dummy)	4682	.0322512	.1766853	0	1
DCA (count)	4682	1.801794	5.048326	0	51
DCA (dummy)	4682	.4431867	.246825	0	1
Defense alliance	4682	.5700555	.4951208	0	1
Past coup	4641	.046388	.1044894	0	1
Democracy (Polity IV)	3946	-.0250887	6.880374	-10	10
GDP per capita (logged)	4446	7.534329	1.389692	3.912867	11.97542
Military spending (logged)	3907	12.38943	2.16174	3.367296	19.57725
Military personnel (logged)	3983	3.365929	1.795802	0	8.465899
External threat	4058	.3156485	.1111772	0	.5288495
MID (fatal)	4682	.2058949	.4043972	0	1
Excluded group	4058	.4105471	.4919937	0	1
Civil war	4641	.0593335	.1961024	0	1

Appendix 3: Robustness Checks with Logit Models

Mixed effects logit models

Table A3 – With an extended set of covariates

	Dependent variable: *Coup attempt*			
DCA (count)	-0.542***		-0.618***	
	(0.173)		(0.197)	
DCA (dummy)		-0.620***		-0.658***
		(0.223)		(0.226)
Defense alliance	0.503**	0.451*	0.466*	0.419*
	(0.241)	(0.242)	(0.241)	(0.244)
Past coup	2.185***	2.238***	2.182**	2.205***
	(0.686)	(0.703)	(0.681)	(0.706)
Democracy (Polity IV)	-0.0437***	-0.0488***	-0.0380**	-0.0431**
	(0.0168)	(0.0171)	(0.0169)	(0.0171)
GDP per capita (logged)	-0.405***	-0.431***	-0.383***	-0.417***
	(0.125)	(0.130)	(0.128)	(0.135)
Military spending (logged)	0.0215	-0.0510	0.0623	-0.00614
	(0.129)	(0.127)	(0.130)	(0.130)
Military personnel (logged)	-0.0361	0.00744	-0.0955	-0.0572
	(0.137)	(0.139)	(0.139)	(0.143)
External threat	-0.240	0.993	-0.263	1.107
	(1.104)	(1.091)	(1.157)	(1.129)
MID (fatal)	-0.292	-0.275	-0.248	-0.210
	(0.278)	(0.280)	(0.277)	(0.281)
Excluded group	-0.166	-0.149	-0.138	-0.115
	(0.223)	(0.226)	(0.223)	(0.228)
Civil war	0.171	0.434	0.179	0.475
	(0.473)	(0.475)	(0.472)	(0.478)
Constant	-0.822	-0.342	-1.213	-0.776
	(1.064)	(1.061)	(1.075)	(1.086)
Observations	4059	4059	3306	3306
Log likelihood	-476.547	-481.144	-469.232	-477.286
Developing country sample			✓	✓
Fixed effects	✓	✓	✓	✓
Random intercepts	✓	✓	✓	✓

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A4 – Covariates lagged by one year

	Dependent variable: *Coup attempt*	
DCA (count)$_{(t-1)}$	-0.592***	-0.656***
	(0.189)	(0.208)
Defense alliance$_{(t-1)}$	0.518**	0.559**
	(0.243)	(0.244)
Past coup$_{(t-1)}$	2.220***	2.233***
	(0.668)	(0.655)
Democracy$_{(t-1)}$ (Polity IV)	-0.0133	-0.00951
	(0.0166)	(0.0165)
GDP per capita(logged) $_{(t-1)}$	-0.361***	-0.320***
	(0.121)	(0.122)
Military spending (logged)$_{(t-1)}$	-0.0586	-0.0370
	(0.126)	(0.126)
Military personnel (logged)$_{(t-1)}$	0.0330	0.0118
	(0.136)	(0.137)
External threat$_{(t-1)}$	0.444	0.206
	(1.113)	(1.157)
MID (fatal)$_{(t-1)}$	-0.111	-0.0965
	(0.271)	(0.270)
Excluded groups $_{(t-1)}$	-0.115	-0.120
	(0.226)	(0.223)
Civil war$_{(t-1)}$	0.236	0.206
	(0.474)	(0.471)
Constant	-0.665	-1.028
	(1.070)	(1.073)
Observations	4067	3304
Developing country sample		✓
Fixed effects	✓	✓
Random intercepts	✓	✓

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A5 – Controlling for binary regime type and GDP growth

	Dependent variable: *Coup attempt*			
DCA (count)	-0.573***	-0.652***	-0.496***	-0.569***
	(0.178)	(0.201)	(0.171)	(0.195)
Defense alliance	0.554**	0.516**	0.426	0.390
	(0.246)	(0.246)	(0.242)	(0.241)
Past coup	2.125***	2.130***	2.227***	2.231***
	(0.745)	(0.744)	(0.684)	(0.679)
Democracy (binary)	-1.171***	-1.113***	-0.0409**	-0.0354**
	(0.285)	(0.286)	(0.0169)	(0.0170)
GDP per capita (logged)	-0.381***	-0.374***	-0.347***	-0.328***
	(0.129)	(0.132)	(0.124)	(0.127)
Military spending (logged)	0.0311	0.0701	-0.0542	-0.0139
	(0.130)	(0.131)	(0.126)	(0.128)
Military personnel (logged)	-0.0376	-0.0958	0.0457	-0.0150
	(0.137)	(0.140)	(0.136)	(0.138)
External threat	-0.645	-0.546	0.349	0.329
	(1.111)	(1.159)	(1.126)	(1.180)
MID (fatal)	-0.327	-0.285	-0.254	-0.208
	(0.277)	(0.277)	(0.279)	(0.278)
Excluded group	-0.189	-0.167	-0.218	-0.190
	(0.225)	(0.225)	(0.225)	(0.224)
Civil war	0.179	0.190	0.193	0.204
	(0.480)	(0.480)	(0.477)	(0.476)
GDP growth			-0.0473***	-0.0456***
			(0.0113)	(0.0113)
Constant	-0.665	-1.007	-0.629	-0.999
	(1.073)	(1.082)	(1.063)	(1.075)
Observations	4208	3455	4036	3283
Developing country sample			✓	✓
Fixed effects	✓	✓	✓	✓
Random intercepts	✓	✓	✓	✓

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A6 – Controlling for time trends (full sample)

	Dependent variable: *Coup attempt*			
DCA (count)	-0.475***	-0.452***	-0.455***	-0.475***
	(0.172)	(0.175)	(0.176)	(0.176)
Defense alliance	0.437*	0.442*	0.438*	0.437*
	(0.243)	(0.243)	(0.242)	(0.243)
Past coup	2.140***	2.121***	2.164***	2.139***
	(0.696)	(0.696)	(0.690)	(0.696)
Democracy (Polity IV)	-0.0365**	-0.0343*	-0.0345*	-0.0365*
	(0.0182)	(0.0187)	(0.0187)	(0.0187)
GDP per capita (logged)	-0.364***	-0.368***	-0.352***	-0.364***
	(0.128)	(0.128)	(0.127)	(0.128)
Military spending (logged)	-0.0517	-0.0532	-0.0773	-0.0518
	(0.127)	(0.127)	(0.128)	(0.127)
Military personnel (logged)	0.0414	0.0412	0.0690	0.0414
	(0.136)	(0.137)	(0.138)	(0.137)
External threat	0.376	0.589	0.884	0.380
	(1.132)	(1.206)	(1.256)	(1.249)
MID (fatal)	-0.250	-0.248	-0.256	-0.250
	(0.280)	(0.279)	(0.280)	(0.280)
Excluded group	-0.217	-0.220	-0.235	-0.218
	(0.225)	(0.225)	(0.225)	(0.226)
Civil war	0.195	0.198	0.262	0.195
	(0.478)	(0.478)	(0.479)	(0.478)
GDP Growth	-0.0474***	-0.0466***	-0.0491***	-0.0474***
	(0.0114)	(0.0114)	(0.0116)	(0.0114)
Cold War	0.140	-0.0189	0.363	0.142
	(0.217)	(0.364)	(0.595)	(0.305)
Constant	-0.604	25.45	-0.670	-0.606
	(1.073)	(48.25)	(1.186)	(1.117)
Observations	4036	4036	4036	4036
Yearly time trend (continuous)		✓		
5-year time trend (continuous)			✓	
10-year time trend (continuous)				✓
Fixed effects	✓	✓	✓	✓
Random intercepts	✓	✓	✓	✓

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A7 – Controlling for time trends (developing countries)

	Dependent variable: *Coup attempt*			
DCA (count)	-0.549***	-0.532***	-0.529***	-0.552***
	(0.197)	(0.202)	(0.203)	(0.203)
Defense alliance	0.401	0.404	0.400	0.400
	(0.243)	(0.243)	(0.242)	(0.243)
Past coup	2.159***	2.148***	2.187***	2.160***
	(0.691)	(0.691)	(0.686)	(0.691)
Democracy (Polity IV)	-0.0317	-0.0304	-0.0304	-0.0319
	(0.0184)	(0.0188)	(0.0188)	(0.0187)
GDP per capita (logged)	-0.339***	-0.342***	-0.332**	-0.339***
	(0.129)	(0.130)	(0.129)	(0.129)
Military spending (logged)	-0.0119	-0.0128	-0.0352	-0.0115
	(0.129)	(0.129)	(0.130)	(0.129)
Military personnel (logged)	-0.0183	-0.0183	0.00746	-0.0186
	(0.139)	(0.139)	(0.140)	(0.139)
External threat	0.324	0.457	0.853	0.286
	(1.186)	(1.258)	(1.323)	(1.312)
MID (fatal)	-0.205	-0.205	-0.212	-0.205
	(0.279)	(0.279)	(0.279)	(0.279)
Excluded group	-0.189	-0.191	-0.205	-0.189
	(0.225)	(0.225)	(0.224)	(0.225)
Civil war	0.204	0.206	0.264	0.203
	(0.476)	(0.476)	(0.477)	(0.476)
GDP growth	-0.0456***	-0.0451***	-0.0475***	-0.0457***
	(0.0113)	(0.0114)	(0.0116)	(0.0114)
Cold War	0.115	0.0178	0.358	0.101
	(0.220)	(0.367)	(0.594)	(0.307)
Constant	-0.984	14.98	-1.033	-0.964
	(1.083)	(48.23)	(1.197)	(1.124)
Observations	3283	3283	3283	3283
Yearly time trend (continuous)		✓		
5-year time trend (continuous)			✓	
10-year time trend (continuous)				✓
Fixed effects	✓	✓	✓	✓
Random intercepts	✓	✓	✓	✓

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Random effects logit and pooled logit models

Table A8 – Random effects logit models with an extended set of covariates

	Dependent variable: *Coup attempt*			
DCA (count)	-0.542***		-0.618***	
	(0.173)		(0.197)	
DCA (dummy)		-0.620***		-0.658***
		(0.223)		(0.226)
Defense alliance	0.503**	0.451*	0.466*	0.419*
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	(0.0168)	(0.0171)	(0.0169)	(0.0171)
GDP per capita (logged)	-0.405***	-0.431***	-0.383***	-0.417***
	(0.125)	(0.130)	(0.128)	(0.135)
Military spending (logged)	0.0215	-0.0510	0.0623	-0.00613
	(0.129)	(0.127)	(0.130)	(0.130)
Military personnel (logged)	-0.0361	0.00744	-0.0955	-0.0572
	(0.137)	(0.139)	(0.139)	(0.143)
External threat	-0.240	0.993	-0.263	1.107
	(1.104)	(1.091)	(1.157)	(1.129)
MID (fatal)	-0.292	-0.275	-0.248	-0.210
	(0.278)	(0.280)	(0.277)	(0.281)
Excluded group	-0.166	-0.149	-0.138	-0.115
	(0.223)	(0.226)	(0.223)	(0.228)
Civil war	0.171	0.434	0.179	0.475
	(0.473)	(0.475)	(0.472)	(0.478)
Constant	-0.822	-0.342	-1.213	-0.776
	(1.064)	(1.061)	(1.075)	(1.086)
Observations	4059	4059	3306	3306
Developing country sample			✓	✓
Random effects	✓	✓	✓	✓

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A9 – Logit models with an extended set of covariates

	Dependent variable: *Coup attempt*			
DCA	-0.534***		-0.611***	
	(0.153)		(0.188)	
DCA (dummy)		-0.570**		-0.601***
		(0.222)		(0.224)
Defense alliance	0.477**	0.432**	0.448**	0.407*
	(0.218)	(0.219)	(0.218)	(0.218)
Past coup	2.579***	2.690***	2.556***	2.669***
	(0.525)	(0.548)	(0.523)	(0.545)
Democracy	-0.0424***	-0.0481***	-0.0368***	-0.0425***
	(0.0153)	(0.0159)	(0.0153)	(0.0156)
GDP per capita (logged)	-0.348***	-0.359***	-0.332***	-0.346***
	(0.0979)	(0.101)	(0.101)	(0.104)
Military spending (logged)	-0.0252	-0.107	0.0149	-0.0661
	(0.118)	(0.113)	(0.119)	(0.115)
Military personnel (logged)	0.00230	0.0549	-0.0512	-0.000466
	(0.121)	(0.120)	(0.119)	(0.119)
External threat	-0.0565	1.067	-0.111	1.126
	(0.974)	(0.962)	(1.040)	(0.977)
MID (fatal)	-0.226	-0.200	-0.188	-0.138
	(0.256)	(0.259)	(0.254)	(0.257)
Excluded group	-0.200	-0.193	-0.177	-0.168
	(0.201)	(0.203)	(0.200)	(0.203)
Civil war	0.0749	0.342	0.0844	0.372
	(0.443)	(0.443)	(0.441)	(0.441)
Constant	-0.730	-0.240	-1.084	-0.624
	(0.950)	(0.931)	(0.970)	(0.956)
Observations	4059	4059	3306	3306
Developing country sample			✓	✓
Robust standard errors	✓	✓	✓	✓

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A10 – Logit models with an extended set of covariates and cubic polynomials

	Dependent variable: *Coup attempt*			
DCA (count)	-0.493***		-0.565***	
	(0.150)		(0.183)	
DCA (dummy)		-0.538**		-0.568**
		(0.221)		(0.223)
Defense alliance	0.400*	0.331	0.385*	0.316
	(0.216)	(0.218)	(0.217)	(0.218)
Past coup	1.147*	1.262*	1.125	1.228*
	(0.717)	(0.723)	(0.716)	(0.722)
Democracy (Polity IV)	-0.0303**	-0.0347**	-0.0262*	-0.0306*
	(0.0152)	(0.0160)	(0.0152)	(0.0158)
GDP per capita (logged)	-0.293***	-0.320***	-0.288***	-0.319***
	(0.0992)	(0.103)	(0.102)	(0.106)
Military spending (logged)	0.00136	-0.0601	0.0277	-0.0342
	(0.120)	(0.117)	(0.121)	(0.118)
Military personnel (logged)	0.0461	0.0934	0.00649	0.0532
	(0.122)	(0.122)	(0.121)	(0.121)
External threat	-0.165	1.133	-0.163	1.253
	(1.004)	(0.944)	(1.062)	(0.956)
MID (fatal)	-0.364	-0.319	-0.327	-0.260
	(0.254)	(0.257)	(0.252)	(0.255)
Excluded group	-0.219	-0.216	-0.195	-0.193
	(0.201)	(0.202)	(0.202)	(0.203)
Civil war	-0.0301	0.220	-0.0213	0.256
	(0.449)	(0.449)	(0.447)	(0.449)
Constant	-0.564	-0.188	-0.764	-0.398
	(0.993)	(0.988)	(1.011)	(1.007)
Observations	4059	4059	3306	3306
Developing country sample			✓	✓
Robust standard errors	✓	✓	✓	✓
Cubic polynomials	✓	✓	✓	✓

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A11 – Logit models: controlling for regional distribution and regime type dummies

	Dependent variable: *Coup attempt*					
DCA (count)	-0.446***	-0.512***	-0.453***	-0.523***	-0.429***	-0.499***
	(0.146)	(0.183)	(0.139)	(0.173)	(0.136)	(0.175)
Defense alliance	0.565**	0.560**	0.351	0.306	0.432	0.423
	(0.241)	(0.247)	(0.239)	(0.240)	(0.268)	(0.274)
Past coups	2.517***	2.501***	1.769***	1.761***	1.720***	1.718***
	(0.548)	(0.547)	(0.562)	(0.558)	(0.558)	(0.562)
Democracy (Polity IV)	-0.0427**	-0.0392*	-0.0669	-0.0540	-0.0729*	-0.0607
	(0.0197)	(0.0204)	(0.0414)	(0.0396)	(0.0435)	(0.0424)
GDP per capita (logged)	-0.237**	-0.212*	-0.277***	-0.215*	-0.259**	-0.186
	(0.116)	(0.121)	(0.106)	(0.111)	(0.124)	(0.132)
Military spending (logged)	-0.0826	-0.0360	-0.106	-0.0571	-0.0921	-0.0389
	(0.117)	(0.119)	(0.121)	(0.124)	(0.125)	(0.128)
Military personnel (logged)	0.0577	-0.00424	0.114	0.0333	0.0740	-0.0234
	(0.130)	(0.128)	(0.132)	(0.131)	(0.149)	(0.149)
External threat	0.691	0.683	0.937	0.662	0.893	0.828
	(1.232)	(1.255)	(1.053)	(1.141)	(1.260)	(1.276)
MID (fatal)	-0.153	-0.109	-0.216	-0.169	-0.177	-0.124
	(0.266)	(0.265)	(0.273)	(0.268)	(0.277)	(0.274)
Excluded group with large TEK	-0.192	-0.147	-0.263	-0.246	-0.224	-0.184
	(0.209)	(0.209)	(0.215)	(0.213)	(0.220)	(0.218)
Civil war	0.121	0.131	0.0279	0.0601	0.0358	0.0792
	(0.462)	(0.461)	(0.452)	(0.447)	(0.450)	(0.444)
GDP growth	-0.0499***	-0.0499***	-0.0442***	-0.0420***	-0.0480***	-0.0480***
	(0.0104)	(0.0106)	(0.0105)	(0.0106)	(0.0113)	(0.0117)
Cold War	0.0750	0.0379	0.200	0.189	0.169	0.138
	(0.234)	(0.234)	(0.246)	(0.248)	(0.251)	(0.254)
Constant	-1.763	-2.518*	-0.312	-0.960	-0.947	-1.975
	(1.210)	(1.315)	(1.059)	(1.091)	(1.305)	(1.389)
Observations	3976	3283	3711	2958	3651	2958
Developing country sample		✓		✓		✓
Region dummies	✓	✓			✓	✓
Regime type dummies			✓	✓	✓	✓
Robust standard errors	✓	✓	✓	✓	✓	✓

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Mixed effects models with interaction terms

Table A12 – Mixed effects models with interaction terms

	Dependent variable: *Coup attempt*			
DCA (count)	-0.554***		-0.620***	
	(0.176)		(0.196)	
DCA (dummy)		-0.682***		-0.727***
		(0.230)		(0.236)
DCA (count) x Democracy	0.0106		0.0101	
	(0.0243)		(0.0292)	
DCA (dummy) x Democracy		-0.0450		-0.0441
		(0.0348)		(0.0367)
Democracy (Polity IV)	-0.0455***	-0.0347*	-0.0394**	-0.0301
	(0.0173)	(0.0200)	(0.0174)	(0.0201)
Defense alliance	0.507**	0.436*	0.470*	0.400
	(0.241)	(0.246)	(0.241)	(0.248)
Past coup	2.192***	2.154***	2.192***	2.110***
	(0.683)	(0.717)	(0.679)	(0.723)
GDP per capita (logged)	-0.404***	-0.446***	-0.381***	-0.440***
	(0.125)	(0.133)	(0.128)	(0.138)
Military spending (logged)	0.0215	-0.0360	0.0619	0.00813
	(0.129)	(0.129)	(0.130)	(0.131)
Military personnel (logged)	-0.0368	-0.00740	-0.0960	-0.0723
	(0.137)	(0.140)	(0.139)	(0.144)
External threat	-0.231	0.906	-0.265	1.071
	(1.106)	(1.103)	(1.158)	(1.146)
MID (fatal)	-0.286	-0.309	-0.242	-0.250
	(0.278)	(0.283)	(0.278)	(0.284)
Excluded group	-0.167	-0.156	-0.139	-0.118
	(0.223)	(0.229)	(0.223)	(0.232)
Civil war	0.170	0.415	0.180	0.460
	(0.473)	(0.477)	(0.472)	(0.481)
Constant	-0.830	-0.297	-1.225	-0.691
	(1.064)	(1.071)	(1.076)	(1.098)
Observations	4059	4059	3306	3306
Developing country sample			✓	✓
Fixed effects	✓	✓	✓	✓
Random intercepts	✓	✓	✓	✓

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix 4: Dyad-Year Models

The dyad-year robustness check models set all external variables (DCA, defense alliance, and external threat-related variables) at the dyadic level. In addition to keeping the MID (fatal) variable—whether country i and (j) had an MID before—, I add a variable MID (same side), meaning whether country i and (j) were fighting in coalitions against a 3rd state. Both democracy (polity IV score > 5) is also at the dyadic level. Past coups, military spending and personnel, GDP per capita, and civil war are set at country i level. The custom-sample models exclude any DCA that involves the U.S., and exclude any DCA that involves any of the UN Security Council's five permanent members: U.S., U.K., Russia, France, and China.

Table A13 – Dyad-year logit models

	Dependent variable: *Coup attempt*			
DCA (dummy)	-1.251***	-1.332***	-1.113***	-1.194***
	(0.238)	(0.269)	(0.237)	(0.268)
Defense alliance	0.271***	0.255***	0.275***	0.260***
	(0.0278)	(0.0282)	(0.0278)	(0.0282)
Past coup	2.812***	2.808***	2.028***	2.126***
	(0.0435)	(0.0434)	(0.0478)	(0.0475)
Both democracy	-0.890***	-0.862***	-0.768***	-0.756***
	(0.0306)	(0.0310)	(0.0310)	(0.0314)
GDP per capita (logged)	-0.355***	-0.337***	-0.351***	-0.334***
	(0.00839)	(0.00873)	(0.00844)	(0.00880)
Military spending (logged)	-0.0447***	-0.00671	-0.0426***	-0.00653
	(0.00957)	(0.00956)	(0.00942)	(0.00941)
Military personnel (logged)	-0.109***	-0.158***	-0.0960***	-0.146***
	(0.0103)	(0.0100)	(0.0101)	(0.00985)
MID (same side)	-3.760***	-3.623***	-3.656***	-3.515***
	(0.989)	(0.990)	(0.989)	(0.991)
MID (fatal)	-0.153	-0.104	-0.143	-0.100
	(0.174)	(0.170)	(0.168)	(0.165)
External threat	2.776***	2.744***	2.787***	2.763***
	(0.0810)	(0.0826)	(0.0822)	(0.0840)
Excluded group	-0.210***	-0.187***	-0.185***	-0.164***
	(0.0165)	(0.0165)	(0.0165)	(0.0165)
Civil war	1.134***	1.174***	1.030***	1.085***
	(0.0323)	(0.0321)	(0.0325)	(0.0321)
Constant	-0.833***	-1.238***	-0.145*	-0.589***
	(0.0824)	(0.0834)	(0.0841)	(0.0844)
Observations	507052	418604	507052	418604
Cubic polynomials			✓	✓
Robust standard errors	✓	✓	✓	✓
Developing country sample		✓		✓

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A14 – Dyad-year logit models: socialization mechanism

	Dependent variable: *Coup attempt*	
DCA (at least one democracy)	-1.031***	-1.104***
	(0.318)	(0.336)
DCA (both democracy)	-1.549***	-1.641***
	(0.352)	(0.442)
Defense alliance	0.202***	0.195***
	(0.0276)	(0.0280)
Past coup	1.933***	2.029***
	(0.0469)	(0.0467)
GDP per capita (logged)	-0.373***	-0.354***
	(0.00847)	(0.00880)
Military spending (logged)	-0.0427***	-0.00494
	(0.00953)	(0.00953)
Military personnel (logged)	-0.0893***	-0.140***
	(0.0102)	(0.00995)
MID (same side)	-3.687***	-3.490***
	(0.990)	(0.991)
MID (fatal)	-0.118	-0.0812
	(0.166)	(0.164)
External threat	3.116***	3.082***
	(0.0819)	(0.0831)
Excluded group	-0.166***	-0.146***
	(0.0165)	(0.0165)
Civil war	0.982***	1.035***
	(0.0323)	(0.0319)
Constant	-0.160*	-0.626***
	(0.0856)	(0.0860)
Observations	507412	418901
Cubic polynomials	✓	✓
Robust standard errors	✓	✓
Developing country sample		✓

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A15 – Dyad-year logit models: custom samples

	(Non U.S. Sample)		(Non P5 sample)	
	Dependent variable: *Coup attempt*			
DCA (dummy)	-1.846***	-1.840***	-1.846***	-1.840***
	(0.411)	(0.450)	(0.411)	(0.450)
Defense alliance	0.269***	0.253***	0.269***	0.253***
	(0.0284)	(0.0288)	(0.0284)	(0.0288)
Past coup	1.990***	2.090***	1.990***	2.090***
	(0.0488)	(0.0486)	(0.0488)	(0.0486)
Both democracy	-0.745***	-0.735***	-0.745***	-0.735***
	(0.0317)	(0.0321)	(0.0317)	(0.0321)
GDP per capita (logged)	-0.358***	-0.347***	-0.358***	-0.347***
	(0.00882)	(0.00921)	(0.00882)	(0.00921)
Military spending (logged)	-0.0493***	-0.0168*	-0.0493***	-0.0168*
	(0.00960)	(0.00960)	(0.00960)	(0.00960)
Military personnel (logged)	-0.0903***	-0.142***	-0.0903***	-0.142***
	(0.0104)	(0.0102)	(0.0104)	(0.0102)
MID (same side)	-3.456***	-3.340***	-3.456***	-3.340***
	(0.989)	(0.989)	(0.989)	(0.989)
MID (fatal)	-0.139	-0.0995	-0.139	-0.0995
	(0.188)	(0.185)	(0.188)	(0.185)
External threat	2.921***	2.971***	2.921***	2.971***
	(0.0848)	(0.0863)	(0.0848)	(0.0863)
Excluded group	-0.187***	-0.161***	-0.187***	-0.161***
	(0.0169)	(0.0169)	(0.0169)	(0.0169)
Civil war	1.037***	1.110***	1.037***	1.110***
	(0.0334)	(0.0329)	(0.0334)	(0.0329)
Constant	-0.0774	-0.471***	-0.0774	-0.471***
	(0.0859)	(0.0863)	(0.0859)	(0.0863)
Observations	473991	399437	473991	399437
Cubic polynomials	✓	✓	✓	✓
Robust standard errors	✓	✓	✓	✓
Developing country sample		✓		✓

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix 5: Robustness Checks with Advanced Models

Instrumental variable regression models

Table A16 – First-stage of two-stage least square models

	Dependent variable:			
	DCA (count)	*DCA (dummy)*	*DCA (count)*	*DCA (dummy)*
Instrument$_{(t-1)}$	1.107***	0.121***	0.788***	0.139***
	(0.137)	(0.00884)	(0.119)	(0.00960)
Defense alliance	0.383	0.0428	-0.798	0.00547
	(0.700)	(0.0517)	(0.681)	(0.0568)
Past coup	-3.356**	-0.430***	-2.779*	-0.427**
	(1.604)	(0.164)	(1.413)	(0.168)
Democracy (Polity IV)	0.153***	0.000236	0.124**	-0.00437
	(0.0420)	(0.00347)	(0.0446)	(0.00384)
GDP per capita (logged)	0.975***	0.0577***	0.808***	0.0324
	(0.215)	(0.0153)	(0.214)	(0.0192)
Constant	-7.362***	-0.171	-4.955***	-0.0232
	(1.657)	(0.128)	(1.446)	(0.151)
Observations	4386	4386	3605	3605
Developing country sample			✓	✓
First-stage R^2	0.2281	0.2546	0.1693	0.2561
First-stage F statistics	16.25	67.96	9.81	62.17

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A17 – Two-stage least square models with additional covariates (full sample)

	Dependent variable:			
	Coup attempt	*DCA*	*Coup attempt*	*DCA*
	Two-stage LS	First-stage	Two stage LS	First stage
DCA (count) instrumented	-0.00314**			
	(0.00147)			
DCA (dummy) instrumented			-0.0303**	
			(0.0139)	
Defense alliance	0.0138**	0.732	0.0120**	0.0178
	(0.00565)	(0.730)	(0.00536)	(0.0397)
Past coup	0.204***	-1.867	0.202***	-0.281*
	(0.0407)	(1.395)	(0.0410)	(0.145)
Democracy (Polity IV)	-0.000507	0.104***	-0.000810*	0.000747
	(0.000503)	(0.0380)	(0.000460)	(0.00273)
GDP per capita (logged)	-0.00768**	-0.0463	-0.00737**	0.00546
	(0.00328)	(0.239)	(0.00313)	(0.0179)
Military spending (logged)	0.00269	0.934***	0.00128	0.0502**
	(0.00512)	(0.290)	(0.00473)	(0.0205)
Military personnel (logged)	-0.00228	-0.0315	-0.00104	0.0375
	(0.00443)	(0.301)	(0.00415)	(0.0246)
External threat	-0.0276	-12.86***	0.00262	-0.334**
	(0.0330)	(3.866)	(0.0248)	(0.169)
MID (fatal)	-0.00679	0.148	-0.00534	0.0633**
	(0.00631)	(0.607)	(0.00633)	(0.0316)
Excluded group	-0.00358	0.603	-0.00261	0.0944**
	(0.00751)	(0.643)	(0.00754)	(0.0362)
Civil war	0.0100	-0.301	0.00835	-0.0867
	(0.0237)	(1.450)	(0.0234)	(0.0956)
$\text{Instrument}_{(t-1)}$		1.291***		0.134***
		(0.169)		(0.00873)
Constant	0.0683**	-8.466***	0.0797***	-0.500***
	(0.0333)	(2.892)	(0.0303)	(0.155)
Observations	3934	3934	3934	3934
First-stage R^2		0.350		0.397
First-stage F statistics		10.27		71.07

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

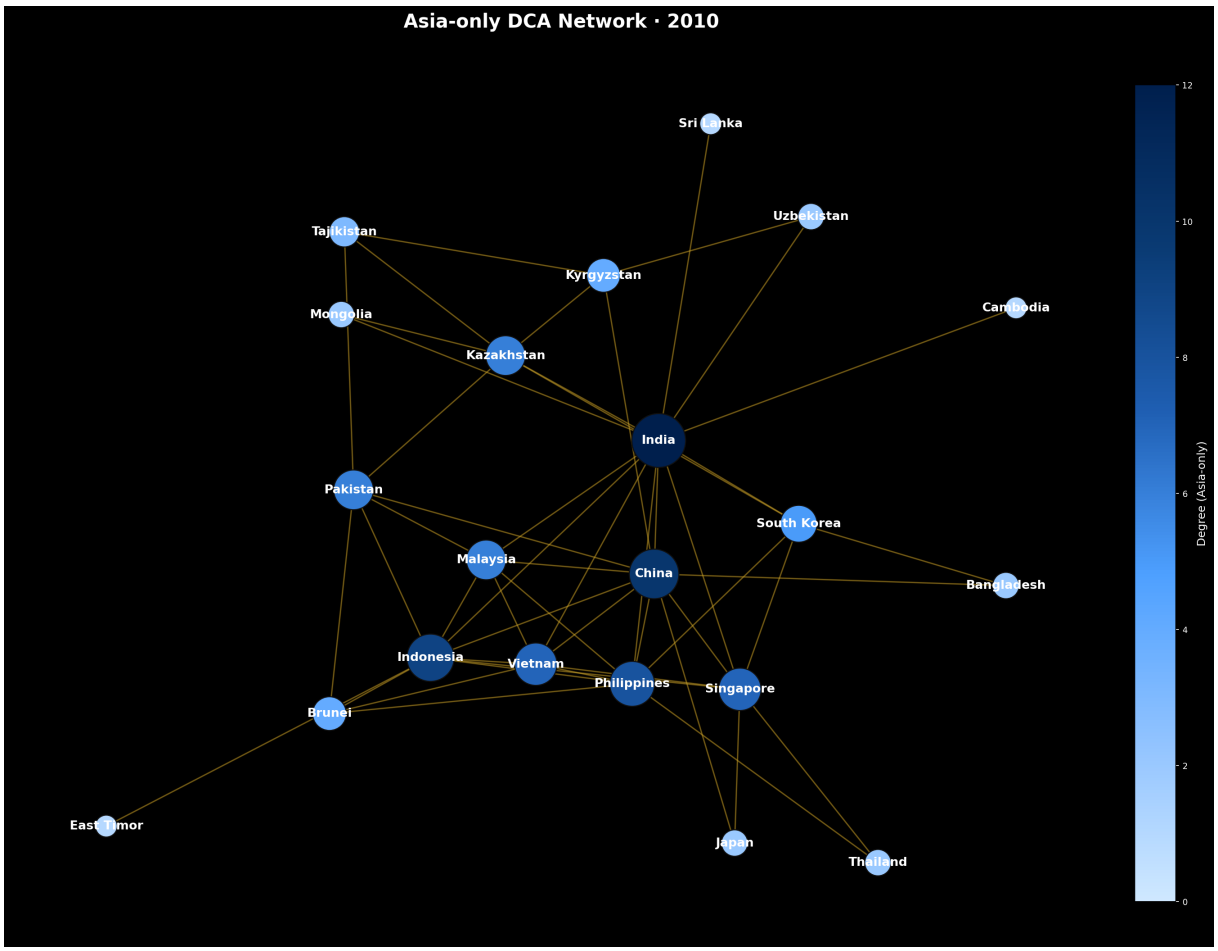
Table A18 – Two-stage least square models with additional covariates (developing countries)

	Dependent variable:			
	Coup attempt	*DCA*	*Coup attempt*	*DCA*
	Two-stage LS	First-stage	Two stage LS	First stage
DCA (count) instrumented)	-0.00515**			
	(0.00257)			
DCA (dummy) instrumented)			-0.0308**	
			(0.0150)	
Defense alliance	0.0120	-0.116	0.0123	-0.00722
	(0.00736)	(0.759)	(0.00649)	(0.0432)
Past coup	0.205***	-1.020	0.201***	-0.295**
	(0.0415)	(1.186)	(0.0418)	(0.144)
Democracy (Polity IV)	-0.000486	0.0911*	-0.000991*	-0.00117
	(0.000591)	(0.0364)	(0.000485)	(0.00284)
GDP per capita (logged)	-0.00753*	0.182	-0.00852*	-0.00166
	(0.00344)	(0.212)	(0.00350)	(0.0197)
Military spending (logged)	0.00270	0.862***	-0.000224	0.0493*
	(0.00622)	(0.254)	(0.00528)	(0.0214)
Military personnel (logged)	-0.00187	-0.176	0.0000900	0.0343
	(0.00525)	(0.265)	(0.00476)	(0.0256)
External threat	-0.0631	-16.11***	0.0130	-0.222
	(0.0588)	(4.696)	(0.0315)	(0.173)
MID (fatal)	-0.0140	-0.848	-0.00756	0.0683
	(0.00805)	(0.549)	(0.00814)	(0.0348)
Excluded group	-0.00386	0.176	-0.00163	0.102**
	(0.00882)	(0.607)	(0.00871)	(0.0389)
Civil war	0.00674	-1.010	0.00964	-0.0748
	(0.0249)	(1.151)	(0.0248)	(0.0981)
$\text{Instrument}_{(t-1)}$		0.891***		0.149***
		(0.133)		(0.00937)
Constant	0.0835**	-5.883**	0.0987***	-0.490***
	(0.0396)	(2.492)	(0.0347)	(0.179)
Observations	3204	3204	3204	3204
First-stage R^2		0.338		0.398
First-stage F statistics		7.22		77.49

Robust standard errors clustered by units in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

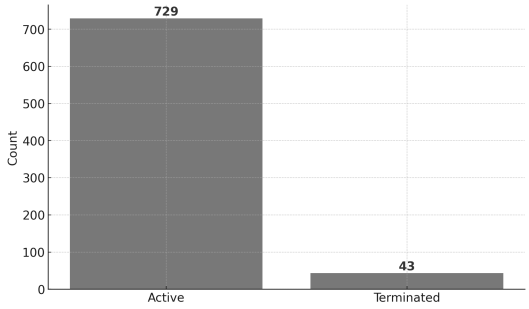
Appendix 6: Figures

Figure A2 – The DCA network in Asia

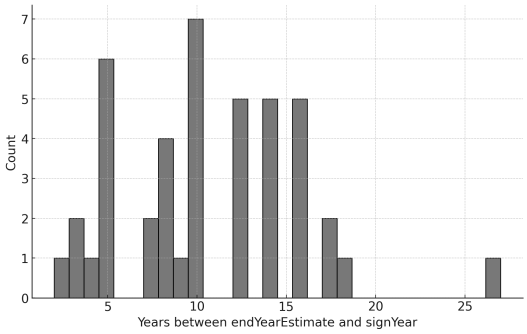


Note: The network is prepared based on data from Kinne (2018).

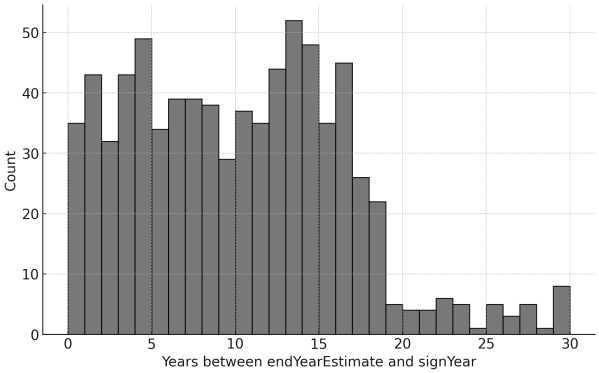
Figure A3 – Duration Status



(a) Termination status

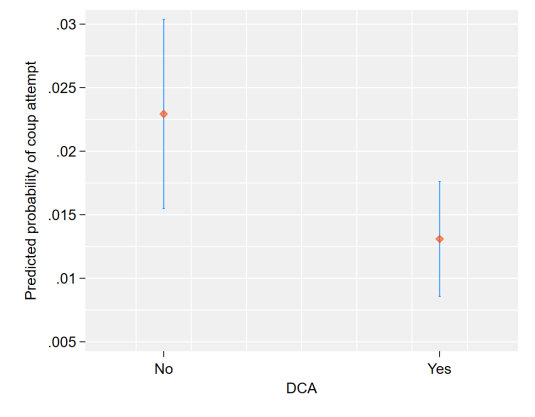


(b) Duration (terminated DCAs)

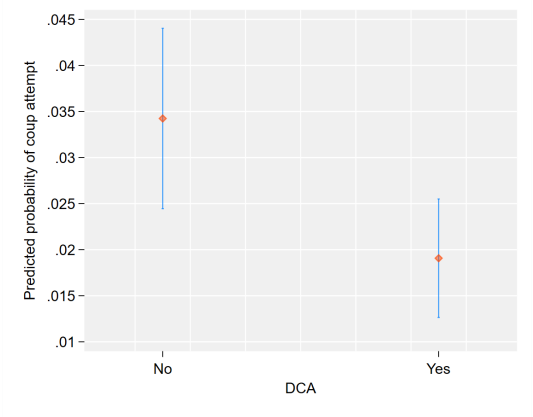


(c) Duration (both active and terminated DCAs)

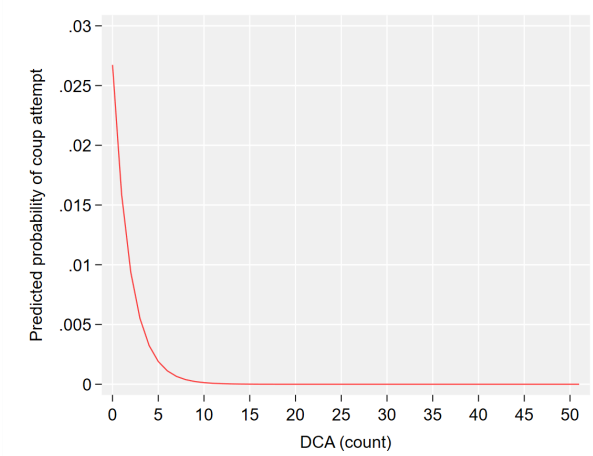
Figure A4 – Marginal effects



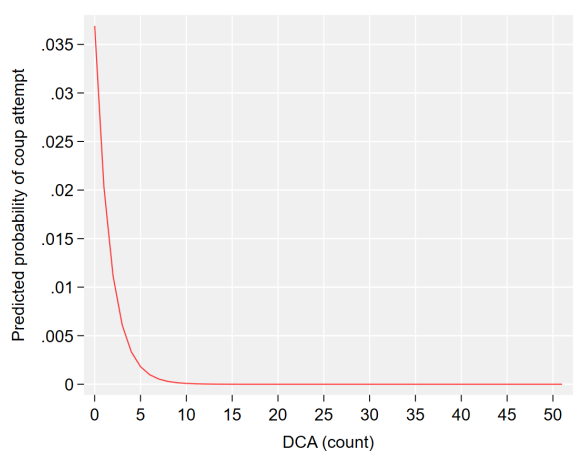
(a) DCA (dummy), full sample



(b) DCA (dummy), developing countries



(c) DCA, full sample



(d) DCA, developing countries